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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,014	05/03/2005	Hideo Hosono	MOR-C469	7683

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EXAMINER	
PEACE, RHONDA S	

ART UNIT	PAPER NUMBER
2874	

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/507,014	HOSONO ET AL.	
	Examiner	Art Unit	
	Rhonda S. Peace	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/29/2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 September 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file for this National Stage application from the International Bureau (PCT Rule 17.2(a)).

Claim Objections

Claim 4 is objected to because of the following informalities: The amended claim 4 which recites "The optical fiber as claimed in claim 1 wherein said cladding comprised plural hollow holes extending in parallel with the optical axis" does not coincide with the original claim 4 submitted 9/8/2004 which recites "fiber gratings as claimed in claim 1 characterized that said cladding is made from an ultraviolet-transmitting resin," and instead is identical to the amended claim 5. Appropriate correction is required. For examination purposes, the original claim 4 has been examined, as opposed to the amended claim 4.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3-6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hideo et al (US 6944380).

Pertaining to claim 1, Hideo et al discloses an optical fiber having a core **5** made of silica glass free of germanium, and further containing 100-1000 ppm of fluorine and 4-7 ppm OH groups, where the OH and fluorine doped core is surrounded by a cladding (column 5 lines 28-46, hereafter indicated as 5:26-48, Fig 1). Hideo et al does not disclose the creation of a grating upon this type of fiber. However, it would have been obvious to one of ordinary skill in the art to create a grating upon this fiber type in order to produce a variety of different components having a wide range of applications, such as filters, multiplexer/demultiplexers, and mirrors, as these devices are well known in the art to include gratings.

Further referring to claim 1, the applicant is claiming the product including the process of making the grating on the waveguide core by irradiating either femtosecond or picosecond laser radiations, and therefor are of "product-by-process" nature. The courts have been holding for quite some time that: the determination of the patentability of product-by-process claim is based on the product itself rather than on the process by which the product is made (*In re Thrope*, 777 F. 2d 695, 227 USPQ 964 (Fed. Cir. 1985)); and patentability of claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself that must be new and unobvious. Applicant has chosen to claim the invention in the product form. Thus a prior art product that possesses the claimed product characteristics can anticipate or render obvious the claim subject matter regardless of the manner in which it is fabricated. A rejection based on 35 U.S.C. section 102 or alternatively on 35 U.S.C. section 103 of the status is eminently fair and acceptable (*In re Brown and Saffer,* 173 USPQ 685 and 688*; In re Pilkington,* 162 USPQ 147.).

Regarding claims 3-6 and 10, Hideo et al discloses the optical fiber as disclosed above. Moreover, Hideo et al discloses the cladding of the above fiber is made from silica glass containing 1000-7000 ppm of fluorine or a silica glass containing 2000-10000 ppm of boron (5:47-48), and may comprise plural hollow holes extending parallel to the optical axis of the fiber (7:19-38, Fig 6). Furthermore, Hideo et al discloses the use of a cladding layer made from a UV transmitting resin (7:1-17), and a protective layer surrounding the cladding (7:51-60). In addition, it would have been obvious to one of ordinary skill in the art to create a grating having a period of refractive index of about

100 mm to 1 micron, as it has been held that where the general conditions of a claim are disposed in the prior art, discovering the optimum range involves only routine skill in the art (*In re Aller*, 105 USPQ 233).

Claims 7, 9, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hideo et al (US 6944380) in further view of Hammon et al (US 6548225).

With respect to claim 7, Hideo et al discloses the fiber structure discussed above. However, Hideo et al does not disclose a method by which gratings may be written upon the fiber in question. Hammon et al discloses a method and apparatus for writing fiber gratings upon a photosensitive waveguide where two laser beams are coincident and interfering at location **45** to create a grating upon the fiber (Fig 1, 4:55-67, 5:1-11). It is well known that fluorine exhibits photosensitive properties, and therefore the fiber of Hideo et al would classify as a photosensitive fiber, and therefore be able to be processed by the method of Hammon et al. It would have been obvious to one of ordinary skill in the art to combine the teachings of Hideo et al and Hammon et al to create a fiber grating, as the method of Hammon et al allows more independent control over the exposure fringe contrast, and period to better create ideal gratings (Hammon et al 3:20-24).

Addressing claims 9 and 11-13, Hideo et al, in view of Hammon et al, describes the method as described above. Furthermore, as can be seen in Figure 1 of Hammon et al, the laser beams are irradiated from the outer side of the outermost fiber layer. In terms of Hideo et al, this outermost layer of the fiber corresponds to the protective layer

described by Hideo et al that surrounds the cladding layer (7:51-60). Hideo et al also teaches the fiber may be subjected to hydrogen treatment of the core and cladding (7:39-50). Hammon et al discloses that the period of the gratings created according to the method discloses can be changed by varying the angle of interference of the two laser beams, by adjusting the relative angles of mirrors **35** and **37** (4:55-65, Fig 1). Moreover, while Hideo et al does not disclose the relative area of the holes compared to the area of the fiber, it would have been obvious to one of ordinary skill in the art to create holes constituting 10-60% of the cross-sectional area of the fiber, as it has been held that where the general conditions of a claim are disposed in the prior art, discovering the optimum range involves only routine skill in the art (*In re Aller*, 105 USPQ 233).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hideo et al (US 6944380) in further view of Hammon et al (US 6548225), and further in view of Kazuaki (JP08-240729).

Pertaining to claim 8, Hideo et al, in view of Hammon et al, describes the method as described above. However, neither Hideo et al nor Hammon et al disclose the addition of a flat area upon the cladding of the fiber, such that the laser beams are coincident on the flat part. Kazuaki et al (JP08-240729) explains the method of providing a flat part on the outside of the cladding through which the fiber is irradiated (paragraph 0003). It would have been obvious to one of ordinary skill in the art to combine the teachings of Dunn et al, Kashyap, and Kazuaki et al in order to provide the fiber of Kashyap with a flat portion through which irradiation will occur as this step

eliminates birefringence and allows for light to be easily coupled through the side of the fiber (paragraph 0006).

Response to Arguments

Applicant's arguments, see pages 6-10, filed 11/29/2005, with respect to the rejection(s) of claim(s) 1 under 35 U.S.C. §102(e) and the rejections of claims 2-9 under 35 U.S.C. §103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art Hideo et al (US 6944380), Hammon et al (US 6548225), and Kazuaki et al (JP08-240729). See the previous sections of this office action for a detailed analysis of the rejections put forth with the mentioned references under 35 U.S.C. §103(a).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda S. Peace whose telephone number is (571) 272-8580. The examiner can normally be reached on M-F (8-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272- 2344. *The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.*

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rhonda S. Peace
Examiner
Art Unit 2874

Michelle R. Connelly-Cushwa
MICHELLE CONNELLY-CUSHWA
PRIMARY EXAMINER
12/8/05